should be prevented by better and more consistent management. The mother may survive—and now usually does with prompt and vigorous treatment—but the fetus often succumbs. Again, an unknown number of fetal deaths may be due to inherited diabetes. Mechanical deaths at delivery, because of excessive size of the fetus, also add to the mortality. Many of these deaths could be prevented by cesarean section. It is probable that overdevelopment of the fetus is encouraged if the maternal blood sugar is allowed to persist at high levels. Another cause for fetal distress, and possible death, is prolonged hypoglycemia due to overdosage with insulin. If the rate of fetal mortality in general is to be reduced to the ideal plane set by Doctor Sherrill, more emphasis must be placed upon the continuous control of the mother. Her diet must be adequate for satisfactory nutrition, and during the whole period of gestation she must be guarded against extreme changes in the blood-sugar level. This care, obviously, should be the responsibility of the internist. Surgical delivery in primaparae is probably the method of choice. Multiparae stand labor well unless the child is grossly oversize.

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THOMAS F. WIER, M. D. (911 Medico-Dental Building, San Diego).—Before the discovery of insulin, few diabetic women became pregnant and none went to term. Now such a woman can be assured of a living infant with little added risk.

Her pregnancy and labor, however, must be guarded against extra burden to her kidneys. We cannot depend on more tolerance to sugar from insulin increase from the infant. Increased consumption of carbohydrates during the last three months of pregnancy must be accompanied with an increased amount of insulin.

Two infants in my service were larger than average. Labors of the mothers were normal, and at or near term. Deep episiotomies healed readily. There were no unusual puerperal complications. Lactations were not dependable. Menstrual cycles were established within normal time.

Thanks to Doctor Sherrill for adding this paper to our literature. He gives the obstetrician further assurance of a successful termination of pregnancy, at or near term, in diabetic women.

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H. A. STEPHENSON, M. D. (490 Post Street, San Francisco).—This paper summarizes the comparative results obtained in pregnancy occurring in diabetes before and since the institution of treatment of the diabetes by insulin, which has practically made pregnancy in diabetes safe. Before its use a large percentage of cases terminated fatally for both mother and child, so that there was a tendency on the part of the obstetrician to advise very strongly in favor of the interruption of pregnancy of such patients. This treatment, however, did not always prevent a subsequent fatal outcome for the mother.

Fortunately the incidence of pregnancy occurring in diabetic patients is very low. The reasons for this have been pointed out by Doctor Sherrill. He has also shown most interesting results from experimental work done on the fetus. The protection of the mother by the fetal pancreas is well established. This change in the fetal pancreas necessitates careful study of blood-sugar in the newborn child, since a fatal result frequently occurs due to hypoglycemia. The puerperal mother may show marked changes following delivery. Personally, I have been opposed to the mother nursing her baby, as I believe that this increases the strain for her.

In conclusion, I would wish to stress the necessity of careful and close supervision of these patients during pregnancy and the puerperium, and strongly urge the obstetrician to coöperate with the physician who has given special study to the treatment of diabetes.

CERVICAL CANCER*

THE RELATION OF ITS CURABILITY AND THE DURATION OF SYMPTOMS

By DANIEL G. MORTON, M. D.
San Francisco

DISCUSSION *by L. A. Emge, M. D., San Francisco; Donald A. Dallas, M. D., San Francisco; Lyell C. Kinney, M. D., San Diego.*

IN this necessarily brief paper I wish to make just two points: first, that cancer is curable, a fact insufficiently appreciated by both profession and laity; and, second, that the possibilities of our present methods of treatment are not being realized to the fullest. The responsibility for this state of affairs lies chiefly with the medical profession, and it is up to us to rectify it. The facts which are to be presented will merely serve to elaborate these two points.

The last twenty years have seen the percentage of cures of cervical cancer rise from 15 to 18 per cent to 20 to 25 per cent, an advance of 10 per cent at most. We can hardly be proud of such a small increase. During this period much time and money have been expended in perfecting the technique of treatment, and in gathering reliable data on the results of treatment. This period has seen the descendency of surgery, the ascendency of radiation as the favorite method of treatment. The principal gain has been in improvement in the treatment of early cases, and in the acquisition of knowledge concerning the natural history of the disease. We have learned the unfortunate fact that at least 70 to 75 per cent of women with cancer of the cervix presenting themselves for treatment have growths which must be classed as inoperable (Stages 3 and 4). Further improvement in technique may conceivably add a few per cent to the number cured, but not much more than this can be hoped for without assistance of some other kind. The assistance needed lies in the direction of earlier diagnosis. It is doubtful that discovery of a cancer cure would entirely solve our problem since the great majority of patients seeking treatment for cancer have advanced growths when first seen. No more could we expect to cure advanced cancer than to cure the terminal stages of any disease. The tools with which we work even today are by no means impotent if the disease be recognized early enough.

IMPORTANCE OF WARNING SYMPTOMS

I wish to consider at this time only one of the many factors which go toward making an early diagnosis, and that is the prompt recognition of warning symptoms. The importance of this factor is recognized in a vague sort of way; it should, however, become more real to us, for it is intensely practical and an approachable problem. There is a very definite relation between the curability of the disease and the promptness with which its symptoms are recognized.

* From the department of obstetrics and gynecology, University of California Medical School.

* Read before the Section on Obstetrics and Gynecology of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

It has been said by some that when cervical cancer gives rise to symptoms it is already advanced and that, therefore, there is little to be gained by educating women regarding these symptoms. Although true in a sense, this belief represents a dangerous attitude in that it belittles the importance of symptoms and leads to a hopeless outlook which may not be justified. While it is true that different cancers vary in the length of time required to produce symptoms depending upon their individual growth characteristics (some may do it early, others late), nevertheless when symptoms first appear the growth is usually relatively early. This assertion will be borne out by the figures which are to follow. I have collected them to show of what great importance is the lowly symptom, and to illustrate my point: that the possibilities of treatment are not being realized to the fullest.

UNIVERSITY OF CALIFORNIA HOSPITAL STATISTICS

I have analyzed the series of cases of cervical cancer at the University of California Hospital from the point of view of duration of symptoms. After excluding a number because of previous treatment, 167 were left for consideration. These were divided as follows:

TABLE 1.—*Proportion of Operable and Inoperable Cases*

		Cases	Per Cent	
Operable	Stage 1	19	11.4	51 cases or 30.5%
	Stage 2	32	19.1	
Inoperable	Stage 3	77	46.1	116 cases or 69.5%
	Stage 4	39	23.4	

It should be noted especially that 116, or approximately 70 per cent, were classed as inoperable when first seen; 30 per cent were considered operable, that is, relatively early.

Average Duration of Symptoms.—The average duration of symptoms for the operable group was 5.52 months, for the inoperable group 9.8 months, figures which show how negligent is woman in recognizing the warning signals of the most dread disease we know. This failure on her part is not her fault; she simply does not know. This state of affairs represents little or no improvement over conditions present many years ago. In 1923,

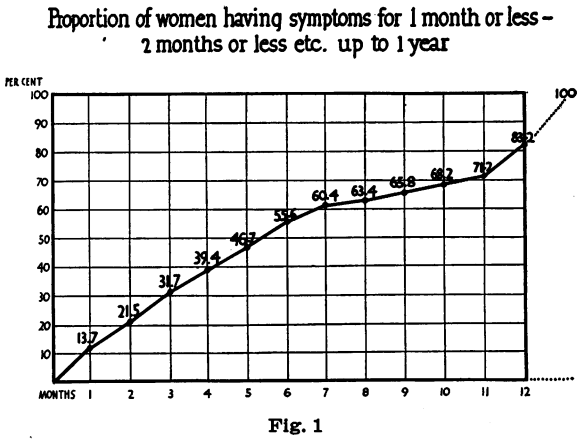

Fig. 1

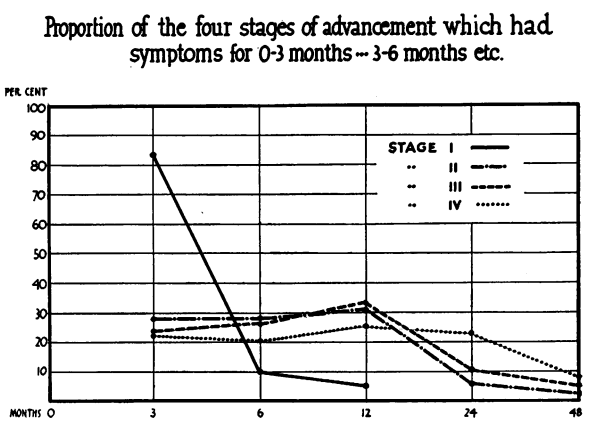

Fig. 2

Martzloff reviewed the cases at the Johns Hopkins Hospital, which had occurred there from approximately 1900 to that time. He found that the average duration of symptoms, without regard to operability, was seven months. It would appear that women recognize warning symptoms no better now than then.

The cases were then grouped as in Figure 1; the small proportion of cases in which symptoms had been present for two to three months, or less, is worthy of note. Furthermore, it is seen that almost 20 per cent of the women had had symptoms for over a year before seeking treatment.

Figure 2 was compiled to show the proportion of Stages 1, 2, 3, and 4 cases which had had symptoms from 0-3 months, 3-6 months, 6-12 months, etc. It merely establishes the general law that "the shorter the duration of symptoms, the earlier is the growth likely to be," and, conversely, that "the earlier the growth, the less likely are the symptoms to have been of long duration." Thus, by far the greatest proportion of the very early (Stage 1) cases had had symptoms for three months or less. The parallelism between the curves for the more advanced cases illustrates well the difficulty in classifying clinically the advanced growths.

GOOD RESULTS IN THOSE WHO CAME EARLY

For purposes of exposition, I have considered two months as a reasonable length of time for women to have symptoms before becoming alarmed enough to consult their physicians. What are the facts about this group? There were thirty-six such patients, which constitute 21.5 per cent of the entire series. Table 2 shows the division of the thirty-six into the various stages of advancement.

The majority of these cases were early (60 per cent), as one would expect. The fact that there were a greater proportion of Stage 3's in this

TABLE 2.—*Having Had Symptoms for Two Months or Less*

		Cases	Per Cent	
Early 58.3%	Stage 1	14	38.8	or 73.6% of all 1's
	Stage 2	7	19.5	or 21.8% of all 2's
Late 41.7%	Stage 3	11	30.5	or 14.3% of all 3's
	Stage 4	4	11.2	or 10.2% of all 4's
	Total	36	100.0	

group than of Stage 2's probably represents clinical error in diagnosis of degree of advancement, error which is unavoidable in any clinical grouping. Let us see, then, what actually happened to these thirty-six women.

Sixteen of the thirty-six, or 44.4 per cent, survived beyond five years, regardless of the stage of the disease. In other words, if all women who presented themselves with cervical cancer had had symptoms for two months, or less, the absolute cure rate (*i. e.,* per cent of all cases seen) would be 44.4 per cent or thereabouts, instead of the 20 per cent which it now is. I desire to emphasize that this high percentage of cure has little or nothing to do with the kind of treatment or the efficacy of any particular method; it is related solely to the fact that these women sought treatment not more than two months after the onset of symptoms. Practically all good clinics obtain from 20 to 25 per cent of cures of all cases of cervical cancer applying for treatment; a similar analysis of their cases would unquestionably reveal a correspondingly high percentage (*i. e.,* 44.4 per cent) of cure of those whose duration of symptoms was less than two months. The explanation lies in the fact that a large proportion of such a group have early growths. In this connection, however, it is interesting to note that fifteen of the group having had symptoms for two months or less were considered inoperable, yet three (*i. e.,* one-fifth) were cured, which is a larger proportion of cures than one expects to get in inoperable cases.

Figure 3 simply amplifies the idea, shows the number of five-year survivors whose duration of symptoms before treatment was one month or less, two months or less, etc. Noteworthy is it that after women have had symptoms for six months or more, the possibility of cure has about reached the baseline which was obtained for the entire series—that is, a little better than 20 per cent. Before that time, the results were steadily better, the shorter the duration of symptoms.

INCREASE IN THE POSSIBILITIES OF CURE

The tremendous increase in the possibilities of cure which could be realized if women were educated to consult their doctors at the onset of symptoms has been illustrated by actual results. Such facts cannot be brought before the profession

TABLE 3.—*Results*

Stage	Cases	Five Years Plus	Comment
1	14	12	One died of intercurrent disease
2	7	1	One operative death
3	11	3	Of the total of 7, *which did* live, in this group
4	4	0	
Total	36	16	Or 44.4 per cent

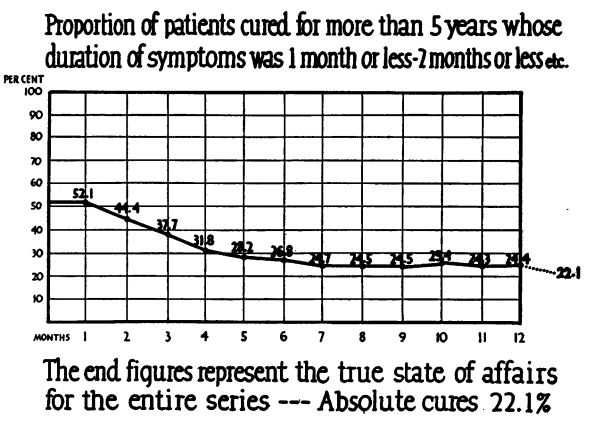

Fig. 3

too often: they are at once a challenge and a hope. Marvelous benefits have accrued to civilization through educational programs regarding the proper methods of preventing smallpox, malaria, yellow fever, diphtheria, and tuberculosis; why not cancer? Certain it is that women lack appreciation of the significance of intermenstrual bleeding or foul discharge. "Bleeding" to a woman is simply menstruation, and excessive or continuous "menstruation" she usually attributes to some complication of pregnancy, or to the "change." There are those, of course, who put off seeing their doctors because they suspect that they have cancer, and are afraid to have their worst fears confirmed. This attitude is a product of misinformation; few would feel that way if they realized how favorable is the prognosis when the disease is discovered in its very early stages. I realize that it is an easy matter to say "Educate women," and quite another to accomplish it. I hold that much of the time, energy, and money now expended in perfecting the technique of treatment should be diverted to the root of the trouble—the lack of common information regarding warning symptoms of cancer. But the man in practice may ask, "What can I do about it? I have no opportunity to help educate people, nor to institute educational programs." There is much that he can do.

THE PHYSICIAN'S PLACE IN THE FIGHT AGAINST CANCER

The physician has many opportunities to advance the fight against cancer of which he often does not avail himself. Frequently, women consult physicians merely because of fear of cancer; when nothing is found, they may actually apologize for taking up the doctor's time—a common experience; the doctor makes a perfunctory examination, assures them that nothing is wrong, and sends them on their way. Other women consult their doctors because of excessive periods; and they are wiser than the doctors who tell them that "It is only the menopause." These are golden opportunities: such women should be congratulated on their wisdom, informed of the significant symptoms of cancer, and encouraged to return for periodic check-up; they deserve careful examination in every instance. The doctor should know, if the woman does not, that while excessive periods

are frequently associated with menopausal changes, they are never normal. These are things the man in practice can do. He can be certain that all who consult him are adequately warned, adequately informed. He can be certain that every unexplained bleeding is properly investigated. Doctor Schulze recently found, in reviewing the causes of bleeding after the menopause, that two-thirds were malignancies of one type or another. If a man is in doubt about a diagnosis, or having made it, is unprepared to give the patient the benefit of the best modern treatment, then free consultation becomes a moral obligation. I have mentioned these points because they directly apply to us all, and because they are practical.

University of California Medical School.

DISCUSSION

L. A. EMGE, M. D. (2000 Van Ness Avenue, San Francisco). — Doctor Morton's paper is complete in itself. There would be no need for discussion were it not to emphasize the great need for a propaganda to fight cancer, for this fight has barely begun. Neither the profession at large nor the laity fully realize this. Because of these sporadic attempts at propaganda, the profession sits quietly back and is content with the efforts of a few. Cancer, and particularly such accessible cancer as that of the cervix, would offer a much higher percentage of cures if more often an early diagnosis were made. To arrive at such a goal, the attention of the profession, as well as that of the laity, must be aroused to the great need of a concerted action between these two bodies in fighting the most dreadful destroyer of life and happiness. Such timely presentations as this are a challenge to the profession that, unless an even greater vigilance and a greater consciousness of duty are practiced, the medical profession will not have fulfilled that great trust with which it has been charged. Every medical student has this impressed upon him. The young graduate must be saturated with the story of cancer. Why is it, then, that the seasoned practitioner is not always alert to the ever-present danger of cancer? Why is it that the busy doctor should be neglectful of his duty in proving, or disproving, the presence of cancer with all the means he commands whenever the slightest doubt as to that presence arises? Whatever the answer, there can be no excuse offered on our part.

The laity fears cancer, and it is this fear that keeps the average individual from seeking information. Doctor Morton is correct in saying that some of the time and money now expended in perfecting the technique of treatment should be diverted to the education of the laity. This alone will offer some hope to effectively battle the question of fear and ignorance. What good will the best of technique be when those afflicted with cancer, on whom it can be used, have gone beyond curability? The fact that cancer is curable when discovered early must, therefore, be impressed upon the laity by a concerted propaganda, and much of this must be spread by the practitioners in city, town, and hamlet.

I am delighted with Doctor Morton's presentation in all its clearness and straightforwardness. He does not mince words. His message carries at once a rebuke and a challenge well worth our sincerest consideration and efforts.

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DONALD A. DALLAS, M. D. (490 Post Street, San Francisco).—Doctor Morton's paper is a timely one, indeed, and is a clear and concise exposition of the facts regarding the curability of cancer of the cervix as related to the duration of symptoms. His request that each physician assist in his own small way, as an individual, in bringing to the attention of every woman patient the cardinal symptoms of carcinoma of the cervix is a reasonable and practical one.

Physicians themselves are often woefully ignorant of the true situation when caring for the woman with symptoms of cancer of the cervix. I doubt whether there is a gynecologist of experience who has not seen patients who have been told by their physicians that they were only going through the menopause, or who have had supravaginal hysterectomy or ordinary complete hysterectomy done when the patient was actually suffering from carcinoma of the cervix and the physician failed to recognize it. The cervix must be inspected as well as palpated, and biopsy is essential in many cases if cancer of the cervix is to be recognized early. If the physician cannot himself carry out the proper treatment, it is imperative that he refer her to someone who can do it. Funds might well be diverted from research to the education of women and of the medical profession as a whole.

Simple cauterization of the infected or lacerated cervix, especially after childbirth, will undoubtedly prevent the later development of cancer in many instances, and every physician who assumes the responsibility of treating the female organs of reproduction should be thoroughly trained in the indications for the technique of cauterization of the cervix.

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LYELL C. KINNEY, M. D. (1831 Fourth Street, San Diego). — The facts presented in Doctor Morton's paper are among the most important weapons in the control of cancer. We have long known that the majority of women with cervical cancer first come for treatment in the advanced and unfavorable stage, but we have not known how rapidly these women become inoperable or reach the stage unfavorable for radiation. Too often patients are encouraged to wait for one or two periods in the hope that menstrual irregularities will correct themselves before an examination is made. Very frequently patients with a suspicious erosion are given palliative treatment for two or three months before a biopsy is taken. Doctor Morton has shown that in both instances the reasonable hope of cure has been lost by temporizing. It is a very serious responsibility to allow any delay in the radical treatment of cancer of the cervix in face of the fact that the curability of cancer drops from 75 to 15 per cent within two months after the initial symptoms.

The control of cancer in the cervix rests almost entirely on the family physician. He can very largely prevent cancer of the cervix by insisting on the early treatment of lacerations, erosion, and cervicitis. He can greatly increase the possibility of cure if he will educate his patients to recognize the immediate danger of any menstrual irregularity. He can save many of his patients from hopeless incurability if he will examine every case of irregular bleeding, and insist on an early biopsy in every suspicious case. Such preventive measures, plus early adequate treatment, will cause an impressive drop in our cancer mortality.

MAGNESIUM SULPHATE—ITS INTRAVENOUS USE IN HYPERTENSION AND ALLIED EYE CONDITIONS*

By HENRY H. LISSNER, M. D.
Los Angeles

DISCUSSION *by E. M. Lazard, M. D., Los Angeles; Hyman Rapaport, M. D., Los Angeles; Gabriel Segall, M. D., Los Angeles.*

IT is well known, from past experiences, that the profession is slow to accept any new idea as to the application of a certain drug to the treatment or alleviation of a given condition unless the recommendation is based upon proved experimental or clinical observation.

* From the department of cardiovascular disease, Cedars of Lebanon Hospital, Los Angeles.

* Read before the meeting of the American College of Physicians, San Francisco, April 4-8, 1932.